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10/657,172	09/09/2003	Satoru Horita	P23805	1034

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EXAMINER	
PETERSON, CHRISTOPHER K	
ART UNIT	PAPER NUMBER
2622	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/657,172	HORITA, SATORU	
	Examiner	Art Unit	
	CHRISTOPHER K. PETERSON	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7,8,10,12-16 and 21-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7,8,10,12-16 and 21-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The Amendment After Non-Final Rejection filed on 2/21/2009 has been received and made of record. Examiner notes that the Applicant has added new claims 22 - 29, which include limitations similar to those of claims 1 - 21. Claims 1 – 4, 7, 8, 10, 12 – 16, 21 - 29 are pending in this application.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 13, and 14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 8, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki (Japanese Unexamined Patent # Sho-63-234937) in view of Masami (Japanese Patent # 08-163408) and further in view of Maeda (US Patent # 5,974,190).

As to claim 1, Miyazaki (Fig. 1) teaches a filtering device which filters original image data, said original image data having original luminance data and color difference data, comprising:

- a generating processor (matrix circuit 18 and 21) that generates first luminance data (Y) and second luminance data (S) (Page 6, line 23 – Page 7, line 16). Miyazaki teaches two matrix circuits (18 and 22) both take the RGB signal and convert it into luminance (Y) and color difference signals (R-Y and B-Y).
- a synthesizing processor (NTSC encoder 25 and adder 23) that synthesizes said first luminance data (Y from matrix circuit 18), said color difference data (R-Y and B-Y from matrix circuit 18), and said third luminance data (Y(dout) from Masami) into synthesized image data, without synthesizing filtered color difference data (Page 7, lines 11 – 20). Miyazaki shows in figure 1 the color difference signal going to the NTSC encoder has not gone through any type of filtering.

Miyazaki does not teach predetermined ratio or a filtering processor. Masami reference teaches a device used to correct an image from a television receiver, VTR, a video camera, or a printer as it relates to a suitable noise detection circuit, a noise rejection circuit, and an edge enhancement circuit. Masami (Drawing 19) teaches:

- a generating processor (smoothing machine 54B) that generates first luminance data (Y) and second luminance data (S) such that said original luminance data (Y(din)) is separated into said first luminance data (Y(din)) and said second luminance data (Y(ave)) according to a predetermined ratio (weighing factor p) (Para 119 and 120).

- a filtering processor (coefficient variable filter 83) that filters said second luminance data by a low-pass filter so as to transform said second luminance data (Y(ave)) into third luminance data (Y(dout)) while the first luminance data (Y(din)) and the color difference data are not low-pass filtered (Para 107 – 109, 114, and 118 -120); and,
- wherein the third luminance data (Y(dout)) defines a blurred luminance image and the synthesized image data comprises a soft focus image in which the color balance of the original image data is preserved (Para 121). Masami teaches a smoothing luminance data (Y(ave).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided predetermined ratio of luminance or a filtering processor as taught by Masami to the endoscope device of Miyazaki, to provide a noise detection circuit, a noise rejection circuit, and edge enhancement circuit without the high cost of a frame memory requirement (Para 10 and 11).

Miyazaki in view of Masami do not teach wherein said original image undergoes a gamma correction using a first gamma curve so as to generate said first luminance data, and said original image undergoes a second gamma correction using a second gamma curve so as to generate said second luminance data, said second gamma curve being different from said first gamma curve. Maeda (Fig. 3) teaches wherein said original image (memory unit 34) undergoes a gamma correction (gradation circuit 36) using a first gamma curve (gamma characteristic corresponding to the image signal components in the low luminance area) so as to generate said first luminance data (low

luminance), and said original image (memory unit 35) undergoes a second gamma correction (high luminance gradation circuit 37) using a second gamma curve (gamma characteristic corresponding to the image signal components in the high luminance area) so as to generate said second luminance data (high luminance), said second gamma curve being different from said first gamma curve (proper gradation correction using the gamma characteristic according to each density characteristic) (Col. 19, lines 20 – 44). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided gamma correction using a first gamma curve so as to generate said first luminance data, and said original image undergoes a second gamma correction using a second gamma curve so as to generate said second luminance data, said second gamma curve being different from said first gamma curve as taught by Maeda to the endoscope device of Miyazaki in view of Masami, to provide a photographed image reproducing apparatus which makes it possible to apply an image quality correction according to a photographed content to a picked-up image of a photographed image to assure image reproduction in accordance with the photographed content and photographing condition. (Col. 2, lines 46 – 52 of Maeda).

As to claim 13, this claim differs from claim 1 only in that the claim 1 is a filtering device apparatus claim whereas claim 13 is a digital camera with filtering device. Thus method claim 13 is analyzed as previously discussed with respect to claim 1 above.

As to claim 14, this claim differs from claim 1 only in that the claim 1 is an apparatus claim whereas claim 14 is a method. Thus method claim 14 is analyzed as previously discussed with respect to claim 1 above.

As to claim 8, Masami teaches a predetermined ratio is selected from a stepwise series of predetermined ratios (weighing factor p) (Para 118 - 120). Masami shows the equation to determine the weighing factor p in equation 9 (above Para 117). The equation shows three steps.

As to claims 15 and 16, these claims differ from claim 8 only in that the claim 8 is dependent on claim 1 whereas claims 15 and 16 are dependent on claims 13 and 14 respectively. Thus claims 15 and 16 are analyzed as previously discussed with respect to claim 8 above.

5. Claim 2 – 4, 10, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki (Japanese Unexamined Patent # Sho-63-234937) in view of Masami (Japanese Patent # 08-163408), further in view of Maeda (US Patent # 5,974,190), and further in view of Luo (US Patent 7,031,549).

As to claim 2, note the discussion above. Miyazaki in view of Masami and further in view of Maeda do not teach an image reduction processor and an image restoration processor. Luo (Fig 2) teaches:

- an image reduction processor (decompose quantized gray scale component into n-binary levels (203)) which reduces the image resolution corresponding to said second luminance data before said filtering processor filters (morphologically filter (204)) said second luminance data (Col. 3, line 29 – 59); and

- an image restoration processor recombine filter binary levels into gray level image to produce segmentation result (205) which restores the image resolution, which has been reduced by said image reduction processor (203), after said filtering processor (204) filters said second luminance data (Col. 4, line 29 – 33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided an image reduction processor and an image restoration processor as taught by Luo to the endoscope device of Miyazaki in view of Masami and further in view of Maeda, because it enhances the tone reproduction of the digital image (Col. 1, line 66 – Col. 2, line 7 of Luo).

As to claim 3, Luo teaches a second filtering processor (low-pass filter grayscale component via control of segmentation results (206)) which filters said second luminance data which has been filtered by said filtering processor (204) once already, after said image restoration processor (205) restores said image resolution (Col. 4, lines 34 – 52).

As to claim 4, Luo teaches an image resolution is selectable from a stepwise series of predetermined resolutions (Col.3, lines 29 – 42).

As to claim 10, this claim differs from claim 2 only in that the claim 2 is dependent on claim 1 whereas claim 10 is dependent on claim 8. Thus claim 10 is analyzed as previously discussed with respect to claim 2 above.

As to claim 21, this claim differs from claim 2 only in that the claim 2 is dependent on claim 1 whereas claim 21 is dependent on claim 14 respectively. Thus claim 21 is analyzed as previously discussed with respect to claim 2 above.

As to claim 22, this claim differs from claim 2 only in that the claim 2 is dependent on claim 1 whereas claim 22 is dependent on claim 13 respectively. Thus claim 22 is analyzed as previously discussed with respect to claim 2 above.

6. Claims 7, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki (Japanese Unexamined Patent # Sho-63-234937) in view of Masami (Japanese Patent # 08-163408) further in view of Maeda (US Patent # 5,974,190), and further in view of Kato (US Patent 7,136,100).

As to claim 7, note the discussion above. Miyazaki in view of Masami and further in view of Maeda do not a second gamma curve is selected from a stepwise series of predetermined gamma curves. Kato (Fig. 3) teaches a second gamma curve is selected from a stepwise series of predetermined gamma curves (19e) (Col. 5, line 62 – Col. 6, line 19). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a gamma correction as taught by Kato to the endoscope device of Miyazaki in view of Masami and further in view of Maeda, to obtain high-quality image data while preventing deterioration of image quality (Col. 2, lines 4 – 8 of Kato).

As to claims 23 and 24, these claims differ from claim 7 only in that the claim 7 is dependent on claim 1 whereas claims 23 and 24 are dependent on claims 13 and 14

respectively. Thus claims 23 and 24 are analyzed as previously discussed with respect to claim 7 above.

7. Claim 12, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki (Japanese Unexamined Patent # Sho-63-234937) in view of Masami (Japanese Patent # 08-163408) further in view of Maeda (US Patent # 5,974,190), and further in view of Luo (US Patent 7,031,549) as applied to claim 10 above, and further in view of Jogo (US Patent 6,940,620).

As to claim 12, Jogo teaches the extent of the soft focus can be changed. Jogo teaches a soft focus control box (86) (Col. 7, lines 29 – 38). The switch can be moved to add or subtract soft focus effect (Fig. 9 of Jogo). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a soft focus as taught by Jogo to the image processor of Kato, because it is possible to reduce the moiré in the grayscale image without lowering the image quality (Col. 1, lines 58 – 65 of Jogo).

As to claims 25 and 26, these claims differ from claim 12 only in that the claim 12 is dependent on claim 10 whereas claims 25 and 26 are dependent on claims 22 and 21 respectively. Thus claims 25 and 26 are analyzed as previously discussed with respect to claim 12 above.

8. Claim 12, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki (Japanese Unexamined Patent # Sho-63-234937) in

view of Masami (Japanese Patent # 08-163408) further in view of Maeda (US Patent # 5,974,190), and further in view of Kawaguchi (Japanese Patent Application 03-219738).

As to claim 27, Maeda teaches a first gamma curve has a zero offset as noted above. Miyazaki in view of Masami and further in view of Maeda do not teach second gamma curve has a non-zero offset. Kawaguchi reference teaches a gamma offset adjustment circuit which sets up the input-reference DC levels of a video signal correctly to the gamma correction curve of a gamma correction circuit (Para 1). Kawaguchi (Drawing 1) teaches a second gamma curve (gamma correction curve) has a non-zero offset (input signal DC levels) (Para 14 and 15). Kawaguchi teaches when a control pulse is ON, it means that the reference potential (6) is inserted in the output as for this. Then, if the amplitude of the reference potential inserted in the output terminal (5) is adjusted, input signal DC levels can be appropriately set up to a gamma correction curve. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a gamma offset adjustment circuit as taught by Kawaguchi to the endoscope device of Miyazaki in view of Masami and further in view of Maeda, to provide the circuit which can double input DC levels with a desired position correctly to a gamma correction curve, even if there is no pedestal clamping circuit of an input (Para 7 of Kawaguchi).

As to claims 28 and 29, these claims differ from claim 27 only in that the claim 27 is dependent on claim 1 whereas claims 28 and 29are dependent on claims 13 and 14

respectively. Thus claims 28 and 29 are analyzed as previously discussed with respect to claim 27 above.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER K. PETERSON whose telephone number is (571)270-1704. The examiner can normally be reached on Monday - Friday 6:30 - 4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Sinh can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. K. P./
Examiner, Art Unit 2622
8 May 2009

/Sinh Tran/
Supervisory Patent Examiner, Art Unit 2622